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Docket No.: 9988.090.00  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
KIM, Young Soo

Customer No.: 30827

Application No.: 10/720,749

Confirmation No.: 2778

Filed: November 25, 2003

Art Unit: 1746

For: WASHING MACHINE CONTROL METHOD

Examiner: Alexander Markoff

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDED APPEAL BRIEF**

Sir:

In response to a Final Rejection of all pending claims mailed on September 20, 2007, an Advisory Action mailed on April 2, 2007, and a Notification of Non-Compliant Appeal Brief mailed on November 28, 2007, and in support of a Notice of Appeal filed March 20, 2007, Appellant hereby submits this Amended Appeal Brief.

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This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c):

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**I. REAL PARTY INTEREST**

The real party in interest for this appeal is: LG Electronics Inc., the assignee of record.

**II. RELATED APPEALS AND INTERFERENCES**

Appellant states that it has no knowledge of any prior or pending appeals, judicial proceedings, or interferences, which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in this appeal.

**III. STATUS OF CLAIMS**

Total Number of Claims in the Application.

There are 9 claims pending in this application.

Current Status of Claims:

Claims canceled: None.

Claims withdrawn from consideration but not canceled: None.

Claims pending: 1-9.

Claims allowed: None.

Claims objected to: None.

Claims rejected: 1-9.

Claims on Appeal: 1-9.

**IV. STATUS OF AMENDMENTS**

Appellant states that no amendments to the claims were made after final rejection.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed invention is directed to a washing machine control method that reduces the time required for completion of water supply operation to a set water level. *See* paragraph [0006]. According to a related art washing machine control method, a set water level is continuously monitored using a water level sensor, and is replenished a number of times to the set water level while interrupting the washing step. Because the watering step is repeatedly interrupted and water is replenished a number of times, the time to perform the washing is lengthened. *See* paragraphs [0005]-[0006]. Accordingly, the claimed invention is directed to resolving one or more of the problems discussed above.

Independent claim 1 recites a washing machine control method that includes proceeding with a user-selected wash course after supplying water to a washing machine according to a first water level set based on an amount of laundry in the washing machine. *See* Fig. 2, S201, and S203, and paragraph [0019]. Then a second water level is sensed at a predetermined time during the wash course. *See* Fig. 2, S206 and paragraph [0020]. Then a water level reduction rate is calculated based on the set first water level, the sensed second water level, and time. *See* Fig. 2, S208 and paragraph [0021]. A water re-supply amount is then determined by comparing the calculated water level reduction rate to a predetermined rate value. *See* Fig. 2, S209 and paragraph [0021]. Then the user-selected wash course is completed after re-supplying water to the washing machine according to the water re-supply amount. *See* Fig. 2, S210, S211, and S212, and paragraph [0021].

Independent claim 9 recites a washing machine control method that includes supplying water to a washing machine according to a first water level based on an amount of laundry in the washing machine. *See* Fig. 2, S201, and S203, and paragraph [0019]. Then a wash cycle is performed for a predetermined time. *See* Fig. 2, S205 and paragraph [0019]. Then a second water level is sensed after the predetermined time. *See* Fig. 2, S206 and paragraph [0020]. A

water level reduction rate is then calculated by comparing the first water level and the second water level over time. *See* Fig 2, S208 and paragraph [0021]. A water re-supply amount is then determined by comparing the calculated water level reduction rate to a predetermined rate value. *See* Fig. 2, S209, S210, and S211, and paragraph [0021]. Then, the wash cycle is completed after re-supplying water to the washing machine based on the water re-supply amount. *See* Fig. 2, S212 and paragraph [0021].



**VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1) Whether the rejection of claims 1-9 is proper under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,842,929 to Kim et al. (hereinafter “*Kim*”). *See Office Action* mailed September 20, 2006 at § 2.

**VII. ARGUMENT****1) Rejection under 35 U.S.C. § 102(e) as being anticipated by *Kim***

As required in section 2131 of the M.P.E.P., in order to anticipate a claim under 35 U.S.C. § 102, “the reference must teach every element of the claim.” “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

**A) Claim 1**

Claim 1 recites, among other features, “calculating a water reduction rate based on the set first water level and the sensed second water level.” This feature provides advantage such as optimum water re-supply amount being quickly determined, and thus preventing an excessive repetition of water re-supply operations. *See, for example*, paragraph [0022]. The Examiner admits that *Kim* does not use the term “water reduction rate.” However, the Examiner argues that the instant claim does not specify what is referenced as a “water reduction rate,” and moreover that the term “rate” is not defined. *See* page 2 of the Final Office Action mailed September 20, 2006.

Appellant does not agree with the Examiner’s argument. M.P.E.P. § 2111.01 states that words of a claim must be given their “plain meaning” unless such meaning is inconsistent with the specification. Specifically, M.P.E.P. § 2111.01 states that ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say. The term “rate” has a plain and ordinary meaning to one skilled in the art. For instance, Webster’s II New Riverside University Dictionary defines “rate” as a quantity measured in terms of another measured quantity. This definition is consistent with the specification. That is, the specification describes that “water level reduction rate” may be the change in water level (L1 and L2) relative to a

change in time. *See, for example*, page 6, paragraph [0021]. In summary, the Examiner's argument that the term "rate" is not defined is simply wrong.

The Examiner mistakenly asserts that *Kim*'s "measuring [a] number of 'refills' in time and measuring 'elapsed time' is a measuring of the rate." Final Office Action at page 2. The Examiner is incorrect. The cited disclosure of *Kim* does not describe the use of the measured values of the number of refills and elapsed time to determine any rate. Instead, *Kim* discloses that the number of water re-supplies and the elapsed time of each re-supply are used to determine the "final washing load," that is, the total weight (*i.e.*, the heaviness) of the laundry and water in the tub. *Kim* at column 5, lines 52-55. "[T]he final washing load is determined with reference to a number of water resupply times at each elapsed time after the initial water supply." *Id.* at column 5, lines 63-65. In other words, the number of water re-supplies and the elapsed time of each re-supply are used for the purpose of calculating a total weight of laundry and water in the tub, not a rate. *See id.* at column 5, lines 52-55.

While *Kim* may record the number of times water is re-supplied and the time that has elapsed between the end of the initial water supply step and the re-supply steps, the data is not used (and is not disclosed as being used) for "calculating a water reduction rate based on the set first water level and the sensed second water level," as required in claim 1. As stated above and below, *Kim* relates to determinations of weight, not rate. One cannot reasonably understand *Kim* as containing an express or inherent disclosure of a calculation of "a water level reduction rate," as recited in claim 1.

The Examiner further argues "that the calculations of Kim et al serve for the same purpose [as the claimed invention] – to determine [a rate] of water absorption in the laundry and determine washing settings based on the obtained data." Final Office Action at page 3 (citing to *Kim* at column 5, line 2 - column 6, line 4). This is simply not true.

In fact, as stated above, the purpose of *Kim* is to determine the combined weight of the laundry and water in the tub. *Kim* discloses measuring the water level within the drum via a water level sensor. When the sensed water level is determined to be below a predetermined minimum water level, “the controller opens the water supply valve until a water level higher than the minimum water level is detected at the water level sensor.” See column 5, lines 8-16. *Kim* further discloses that the number of times water is re-supplied to the drum is measured and each time water is re-supplied to the drum, the time that has elapsed between the end of the initial water supply step and the re-supply step is measured. These measurements are then stored in the controller. See column 5, lines 20-25. However, *Kim* fails to use the stored data to determine a “rate.”

Instead, *Kim* uses these data to determine the weight of the final washing load in order to carry out washing according to a washing method consistent with the actual washing load (weight) to prevent overload to the motor thereby enhancing washing performance. See column 7, lines 54-65. The final washing load is the sum of the number of water re-supply times for each of a plurality of time periods multiplied by a unitless weighting factor (not to be confused with the weight, or heaviness, of the combined laundry and water in the tub). See column 6, lines 33-67. Summing a weighted value of the number of times that water is re-supplied to the drum cannot yield a rate value. Therefore, *Kim* cannot possibly anticipate “calculating a water level reduction rate,” as recited in claim 1.

Furthermore, *Kim* fails to disclose “calculating a water level reduction rate based on the set first water level and the sensed second water level,” where the first water level is set prior to “proceeding with a user-selected wash course” and the second water level is sensed “during the wash course.” Instead, *Kim* discloses determining the final washing load prior to proceeding with a user-selected wash course. See column 7, lines 35-37. Therefore, *Kim* fails to disclose,

either expressly or inherently, at least “calculating a water level reduction rate based on the set first water level and the sensed second water level.”

Therefore, the rejection of claim 1 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**B) Claim 2**

Claim 2 depends from claim 1 and recites that “the water is re-supplied according to the first water level, if the calculated water level reduction rate is less than the predetermined value.” *Kim* does not disclose this feature. Instead, *Kim* discloses that the controller repeats the water re-supply whenever it is determined that the water level in the drum is below a minimum water level. See *Kim* at column 5, lines 16-18. In other words, there is no calculation of water reduction rate that is used to determine whether the water is re-supplied according to the first water level, as required in claim 2.

Therefore, the rejection of claim 2 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**C) Claims 3 and 8**

Because claim 3 depends from claim 8, claim 8 will be addressed first. Claim 8 depends on claim 1 and recites that “the water is re-supplied according to a third water level if the calculated water level reduction rate is greater than or equal to the predetermined value.” *Kim* does not disclose this feature. Rather, *Kim* discloses that the controller repeats the water re-supply whenever it is determined that the water level in the drum is below a minimum water level. See *Kim* at column 5, lines 16-18. *Kim* not only fails to disclose calculating water level reduction rate, but also fails to disclose what the controller would do if the calculated water level reduction rate is greater than or equal to the predetermined value.

Claim 3 depends from claim 8 and recites that “the third water level is greater than the first water level.” Because *Kim* fails to disclose all the features of claim 8, it follows that *Kim* fails to disclose all the features of claim 3.

Therefore, the rejection of claims 3 and 8 under 35 U.S.C. § 102(e) as being anticipated by *Kim* are improper and should be reversed.

**D) Claim 4**

Claim 4 depends from claim 1 and recites that “sensing and calculating steps are each repeated, to obtain an average rate of water level reduction, and wherein the user-selected wash course is reset based on the average rate of water level reduction.” *Kim* fails to disclose this feature. *Kim* discloses that the controller sums the number of water re-supply times for each of the preset time zones. See *Kim* at column 6, lines 20-23. *Kim*, however, fails to disclose that “sensing and calculating steps are each repeated, to obtain an average rate of water level reduction ....” Furthermore, *Kim* fails to disclose that “the user-selected wash course is reset based on the average rate of water level reduction,” as recited.

Therefore, the rejection of claim 4 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**E) Claims 5 and 6**

Claim 5 depends from claim 4 and recites that the “sensing and calculating steps are each repeated three times.” Claim 6 depends from claim 4 and recites that the “sensing and calculating steps are each repeated four times.” Because *Kim* entirely fails to disclose the feature of a repetition of the “sensing and calculating steps ... to obtain an average rate of water level reduction,” as recited in claim 4, it stands to reason that *Kim* must also entirely fail to disclose repeating this feature a discrete number of times, as recited in claims 5 and 6. Because *Kim* fails to disclose each and every element of claims 5 and 6, either expressly or inherently, *Kim* fails to anticipate claims 5 and 6.

Therefore, the rejections of claims 5 and 6 under 35 U.S.C. § 102(e) as being anticipated by *Kim* are improper and should be reversed.

**F) Claim 7**

Claim 7 depends from claim 1 and recites that “the first and second water levels are sensed by sensing a variation of a water pressure of the water in the washing machine.” *Kim* is entirely silent as to how water levels are sensed. *Kim* merely states that “the water level in the drum is measured by the water level sensor in the washing machine.” *Kim* at col. 4, lines 58-59. *Kim* never describes his water level sensor. *Kim* does not even illustrate his water level sensor. Any assertion by the Examiner that *Kim* discloses sensing water levels “by sensing a variation of a water pressure of the water in the washing machine,” as recited, amounts to an error that goes beyond hindsight reasoning. Because *Kim* entirely fails to describe, either expressly or inherently, at least sensing water levels “by sensing a variation of a water pressure of the water in the washing machine,” as recited, *Kim* fails to anticipate claim 7.

Accordingly, the rejection of claim 7 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

**G) Claim 9**

Claim 9 recites among other features, “calculating a water level reduction rate by comparing the first water level and the second water level over time.” As a preliminary matter, the arguments made with respect to calculating a water level reduction rate in claim 1 are repeated here by reference. Furthermore, the Examiner’s argument that the phrase “water reduction rate” is not specified in the claims is completely erroneous in view of claim 9. Claim 9 is clear in that the water level reduction rate is calculated “by comparing the first water level and the second water level over time.” *Kim* fails to disclose this feature. *Kim* discloses that the water level sensor keeps measuring the water level in the drum, and the controller keeps comparing the measured water level to a preset minimum water level. The controller repeats the water re-

supply whenever it is determined that the water level in the drum is below a minimum water level. *See Kim* at column 5, lines 8-18. There is no calculation performed by the controller in which water re-supply is based on a temporal factor. In other words, *Kim* fails to describe, either expressly or inherently, the performance of a calculation of “water level reduction rate by comparing the first water level and the second water level over time,” as recited. Moreover, *Kim* fails to describe, either expressly or inherently, that a water level reduction rate (which *Kim* does not calculate) is a factor in “determining a water re-supply amount,” also as recited in claim 9.

Therefore, the rejection of claim 9 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.



**VII. CONCLUSION**

For all the above reasons, Appellant respectfully requests that this Honorable Board find as follows:

- 1) The rejection of claims 1-9 under 35 U.S.C. § 102(e) as being anticipated by *Kim* is improper and should be reversed.

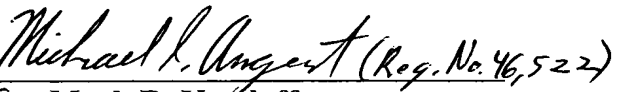
The Claims Appendix contains the set of claims involved in the present appeal.

Appellant wishes to note a misstatement made in the Notification of Non-Compliant Appeal Brief (Notification). Specifically, in commenting on the Appeal Brief filed on August 20, 2007, it was not correct for the Examiner to state that “no arguments are provided with respect to claim 8.” Notification at § 10. Appellant provided arguments with respect to claim 8 on page 13, lines 12-19, of the Appeal Brief filed on August 20, 2007.

The Office is hereby authorized to charge any fees, including the fees required under 37 C.F.R § 1.17(f), any additional fees required under 37 C.F.R. §§ 1.16, 1.17, and/or 1.136, for any necessary extension of time, or any other fees required to complete the filing of this Appeal Brief, to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

Dated: December 17, 2007

Respectfully submitted,

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Attachments

**CLAIMS APPENDIX**

**Claims Involved in the Appeal of Application Serial No. 10/720,749**

1. (Previously Amended) A washing machine control method comprising steps of:  
  
proceeding with a user-selected wash course after supplying water to a washing machine according to a first water level set based on an amount of laundry in the washing machine;  
  
sensing a second water level at a predetermined time during the wash course;  
  
calculating a water level reduction rate based on the set first water level and the sensed second water level;  
  
determining a water re-supply amount by comparing the calculated water level reduction rate to a predetermined value; and  
  
completing the user-selected wash course after re-supplying water to the washing machine according to the water re-supply amount.
2. (Previously Presented) The method as claimed in claim 1, wherein the water is re-supplied according to the first water level, if the calculated water level reduction rate is less than the predetermined value.
3. (Previously Presented) The method as claimed in claim 8, wherein the third water level is greater than the first water level.
4. (Original) The method as claimed in claim 1, wherein said sensing and calculating steps are each repeated, to obtain an average rate of water level reduction, and wherein the user-selected wash course is reset based on the average rate of water level reduction.

5. (Original) The method as claimed in claim 4, wherein the said sensing and calculating steps are each repeated three times.

6. (Original) The method as claimed in claim 4, wherein the said sensing and calculating steps are each repeated four times.

7. (Previously Presented) The method as claimed in claim 1, wherein the first and second water levels are sensed by sensing a variation of a water pressure of the water in the washing machine.

8. (Previously Presented) The method as claimed in claim 1, wherein the water is re-supplied according to a third water level if the calculated water level reduction rate is greater than or equal to the predetermined value.

9. (Previously Presented) A washing machine control method comprising:  
supplying water to a washing machine according to a first water level based on an amount of laundry in the washing machine;

performing a wash cycle for a predetermined time;

sensing a second water level after the predetermined time;

calculating a water level reduction rate by comparing the first water level and the second water level over time;

determining a water re-supply amount by comparing the calculated water level reduction rate to a predetermined value; and

completing the wash cycle after re-supplying water to the washing machine based on the water re-supply amount.

**EVIDENCE APPENDIX**

None.

**RELATED PROCEEDINGS APPENDIX**

None.